

Appl. No. : 10/595,804
Filed : June 12, 2006

AMENDMENTS TO THE CLAIMS

Please amend Claims 2 and 10 as follows. Insertions are shown underlined while deletions are ~~struck through~~.

1 (canceled)

2 (currently amended): A helical synchronous belt having a back layer, helical teeth, and core cords,

substantially all of which core cords are twisted in a single direction at an angle opposed to an angle of the helical teeth, with the helical tooth angle set to 5° to 15° and core cord twist angle set to 15° to 2° , wherein the helical tooth angle is an angle formed by a tooth inclination line of each helical tooth and a line perpendicular to a longitudinal direction of the belt, and the core cord twist angle is an angle formed by a twist inclination line of each core cord and a line parallel to a longitudinal direction of the core cords which is the longitudinal direction of the belt, said twist inclination line of each core cord continuously spirally extending around an exposed surface of the core cord in the longitudinal direction of the core cord, and

wherein the back layer and the helical teeth are made of urethane resin, and no canvas is formed on the helical teeth nor on a surface between the helical teeth, said surface having irregularities created by the twisting of the core cords and configured to contact tops of pulley teeth, said irregularities being such that the irregularities generate friction and resistance against sliding of the belt relative to a pulley, said irregularities being created a result of wrapping the core cords around and in contact with a cylindrical mold having female helical teeth and injecting the urethane resin into a cavity defined between the cylindrical mold and an outer cylinder mold enclosing the cylindrical mold.

3 (original): The helical synchronous belt as described in Claim 2, which has a helical tooth angle of 10° , 7° or 5° and core cord twist angle of 10.2° or 4.8° .

4 (previously presented): The helical synchronous belt as described in Claim 2, wherein the core cords are made of aramid fiber or glass fiber.

5 (previously presented): The helical synchronous belt as described in Claim 2, which is used for driving carriage.

6 (previously presented): The helical synchronous belt as described in Claim 3, wherein the core cords are made of aramid fiber or glass fiber.

7 (previously presented): The helical synchronous belt as described in Claim 3, which is used for driving carriage.

8 (previously presented): The helical synchronous belt as described in Claim 4, which is used for driving carriage.

9 (previously presented): The helical synchronous belt as described in Claim 6, which is used for driving carriage.

10 (currently amended): A helical synchronous belt comprising:

a back layer;

helical teeth configured to be engaged with a pulley and arranged at a helical tooth angle which is formed by a tooth inclination line of each helical tooth and a line perpendicular to a longitudinal direction of the belt; and

core cords embedded between the back layer and the teeth and aligned in the longitudinal direction of the belt for reinforcing the belt, substantially all of said core cords being twisted in a single direction at a twist angle which is formed by a twist inclination line of each core cord and a line parallel to a longitudinal direction of the core cords which is the longitudinal direction of the belt, said twist inclination line of each core cord continuously spirally extending around an exposed surface of the core cord in the longitudinal direction of the core cord,

wherein a direction of the tooth inclination line and a direction of the twist inclination line are opposite to each other with respect to the line perpendicular to the longitudinal direction of the belt, and the helical tooth angle and the twist angle are set at 5° to 15° and 2° to 15° , respectively,

wherein the back layer and the helical teeth are made of urethane resin, and no canvas is formed on the helical teeth nor on a surface between the helical teeth, said surface having irregularities created by the twisting of the core cords and configured to contact tops of pulley teeth, said irregularities being such that the irregularities generate friction and resistance against sliding of the belt relative to a pulley, said irregularities being created as a result of wrapping the core cords around and in contact with a cylindrical mold having female helical teeth and injecting the urethane resin into a cavity defined between the cylindrical mold and an outer cylinder mold enclosing the cylindrical mold.

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11 (previously presented): The helical synchronous belt as described in Claim 10, wherein the helical tooth angle is set at 5°, 7°, or 10° and the core cord twist angle is set at 4.8° or 10.2°.

12 (previously presented): The helical synchronous belt as described in Claim 10, wherein the core cords are made of aramid fiber or glass fiber.

13 (canceled)

14 (previously presented): The helical synchronous belt as described in Claim 4, wherein the core cords are made of aramid fiber.

15 (previously presented): The helical synchronous belt as described in Claim 6, wherein the core cords are made of aramid fiber.

16 (previously presented): The helical synchronous belt as described in Claim 12, wherein the core cords are made of aramid fiber.

17 (previously presented): The helical synchronous belt as described in Claim 2, which is adapted to move back and forth a carriage of a printer or copier.

18 (previously presented): The helical synchronous belt as described in Claim 10, which is adapted to move back and forth a carriage of a printer or copier.